ASSIGNMENT 8

Textbook Assignment: "Ship Stability and Buoyancy," and " Shipboard Damage Control Training," chapters 12 and13.

Learning Objective: Recall the basic functions of trigonometry, the terminology used for ship stability, the effects of buoyancy and gravity on ship stability, and the effects of weight shifts on ship stability.

8-1. Detailed information on ship stability and buoyancy are contained in the *Naval Ships' Technical Manual (NSTM)*, chapter 079, volume 1, and chapter 096.

1. True
2. False

8-2. What trigonometric functions are used to compute data on ship stability?

1. Secant and cosecant
2. Secant and cotangent
3. Secant, cosecant, and cotangent
4. Sine, cosine, and tangent

8-3. The sine of an angle θ, abbreviated as sin θ, is the ratio expressed when the side of a right triangle adjacent to the angle θ is divided by the hypotenuse.

1. True
2. False

8-4. At 90°, what does sin θ equal?

1. 1
2. 2
3. 3
4. 4

8-5. The cosine is the ratio expressed by dividing the side adjacent to the angle θ by the hypotenuse.

1. True
2. False

8-6. The tangent of the angle θ is the ratio expressed by dividing the side opposite the angle θ to the hypotenuse.

1. True
2. False

8-7. Which of the following physics terms is NOT relative to ship stability?

1. *Volume*
2. *Density*
3. *Center of gravity*
4. *Kinetic energy*

8-8. Which of the following formulas is NOT correct?

1. Moment of the couple = F x d
2. Weight = V x d
3. Volume of displaced seawater = 35W
4. Righting moment = W x d^2

8-9. What is the weight of 70 cubic feet of seawater, in long tons?

1. 5
2. 2
3. 3
4. 4

8-10. The center of gravity is the point at which all the weights of the unit or system are considered to be concentrated and have the same effect as that of all the component parts.

1. True
2. False

8-11. The effect of the location of a force is known by what term?

1. *Inertial force*
2. *Force factor*
3. *Force multiplier*
4. *Moment of force*

8-12. A special case of moments occurs when two equal and opposite forces not in the same line rotate a body. What term describes this system of forces?

1. *Pair*
2. *Twin*
3. *Couple*
4. *Complex*

8-13. What part of the ship is used as the axis for calculating a vertical moment?

1. Stern
2. Superstructure
3. Bow
4. Baseline or keel

8-14. The weight of a ship is generally referred to as displacement, meaning the weight of the volume of water displaced by the hull.

1. True
2. False

8-15. What is the formula for determining displacement?

1. V = 15W
2. V = 20W
3. V = 35W
4. V = 40W

8-16. The volume of the watertight portion of the ship above the waterline is known by what term?

1. *Displacement*
2. *Reserve buoyancy*
3. *Trimming moment*
4. F*reeboard*

8-17. The distance in feet from the waterline to the weather deck calculated at the midship section is known by what term?

1. *Draft*
2. *Displacement*
3. *Moment of trim*
4. *Freeboard*

8-18. A moment is the product of a force tending to produce a rotation about an axis times its distance from the axis.

1. True
2. False

8-19. The initial position of the metacenter is no use in the study of stability because it provides a reference point when the ship is upright and stable.

1. True
2. False

8-20. The distance from the center of buoyancy to the metacenter when the ship is on even keel is the

1. metacentric moment
2. metacentric height
3. metacentric diameter
4. metacentric radius

8-21. If the metacentric height of a ship is large, the righting arms that develop, at small angles of heel, will be large. Such a ship is “stiff” and will resist roll.

1. True
2. False

8-22. A large metacentric height is normally desirable for a ship; however, a smaller metacentric height is sometimes desirable for a slow, easy roll that allows for more

1. precise navigation
2. stable cargo storage
3. accurate gunfire
4. loose water space

8-23. Detailed information on the inclining experiment can be obtained from the *NSTM,*

1. chapter 016
2. chapter 026
3. chapter 096
4. chapter 099

Learning Objective: Recall the laws of physics and trigonometry used in determining stability and buoyancy of a ship and the effects of buoyancy, gravity, and weight shifts on ship stability.

8-24. A ship's center of buoyancy is at the geometric center of the ship's underwater hull.

1. True
2. False

8-25. The righting moment of a ship is equal to the ship's displacement times the ship's righting arm and is measured in what units of measurement?

1. Kilotons
2. Foot-tons
3. Pounds
4. Kilograms

8-26. What is the result called when a series of values for the ship's righting arm at successive angles of heel are plotted on a graph?

1. Righting arm arc
2. Stability curve
3. Seaman's curve
4. Buoyancy arc

8-27. A reduction in the size of the righting arm usually results in an increase in a ship's stability.

1. True
2. False

8-28. Righting arms and righting moments are increased as a result of increased displacement.

1. True
2. False

8-29. Trim is measured by the difference between the forward draft and the after draft.

1. True
2. False

8-30. The addition of loose water to a ship alters the stability characteristics by means of three effects that must be considered separately. They are: (1) the effect of added weight, (2) the effect of free surface, and (3) the effect of free

1. trim
2. draft
3. righting arm
4. communication

8-31. For most types of ships, the curves of form may be used without correction for trim provided the trim is less than what percent of the length of the ship?

1. 1
2. 2
3. 3
4. 4

8-32. The MOMENT TO CHANGE TRIM 1 INCH (MTI) is used as the standard measure of resistance to

1. righting inclination
2. vertical inclination
3. longitudinal inclination
4. optimum inclination

8-33. Longitudinal stability is the tendency of a ship to resist a change in what property?

1. Buoyancy
2. Free surface
3. Displacement
4. Trim

Learning Objective: Recall the organization and responsibilities of the damage control training team (DCTT) and the objectives of DCTT training.

8-34. The key to a successful training program is to develop a self-sustaining training capability in each ship through the use of onboard training teams.

1. True
2. False

8-35. Which of the following activities is NOT a training team function?

1. Initiating exercises
2. Developing drill packages
3. Ensuring safety rules are adhered to during exercises
4. Providing daily briefs to the executive officer

8-36. What is the total number of DCTTs that should be established aboard most ships?

1. Ten
2. Nine
3. Five
4. Four

8-37. What training team is required for LHA/LHD/LPH/MCS/LPD only?

1. Aviation Training Team (ATT)
2. Integrated Training Team (ITT)
3. Combat Systems Training Team (CSTT)
4. Engineering Casualty Control Training Team (ECTT)

8-38. Training teams must analyze problem areas or training deficiencies and initiate corrective actions to eliminate the possibility of personnel injury and damage to equipment.

1. True
2. False

8-39. A member of the DCTT does NOT normally hold which of the following positions?

1. Watch station evaluator
2. Safety observer
3. Team leader
4. Watch station supervisor

8-40. What person serves as the Chairman of the Planning Board for Training and as Team Leader of the DCTT?

1. Executive officer
2. Safety officer
3. Damage control assistant
4. Engineer officer

8-41. The duties of the DCTT coordinator include the

1. OMR process
2. RMP process
3. MOR process
4. ORM process

8-42. The team coordinator is responsible to what person for organizing all team training periods, developing training event plans, and making all preparations in support of the event execution?

1. OOD
2. Damage control assistant (DCA)
3. CIC
4. Executive officer

8-43 Trainers, evaluators, and safety observers directly observe individual and team performance of the training event and some may act as initiators.

1. True
2. False

Learning Objective: Recall the objectives and methods of damage control training.

8-44. The goal of damage control training is to organize individual and team training to ensure shipboard readiness.

1. True
2. False

8-45. An effective training program is based on a logical continuum of training, starting with basic knowledge/actions and progressing to more complex evolutions.

1. True
2. False

8-46. An effective training program includes classroom lectures and

1. documentary movies
2. case studies
3. schedule planning
4. intensive casualty drill scenarios

8-47. Which of the following activities is NOT one of the general objectives of damage control training?

1. Developing the ability to assess repair parties in all DC exercises
2. Developing the ability to set material conditions
3. Developing the ability to repair communications gear
4. Developing the ability to recognize unsafe actions and conditions

8-48. The specific damage control training objectives for the damage control assistant includes training in directing CBR defense postures.

1. True
2. False

8-49. Which of the following is a specific objective of the damage control training provided damage control repair parties?

1. training in evaluating damage and setting priorities for repair actions
2. exercising pipe patching, shoring, dewatering and plugging teams in hands-on drills
3. providing informal material deficiency assessment
4. training in communicating vital information to ship control stations

8-50. The specific responsibilities of the in-port DCTT for damage control training include

1. training on setting requirements for material condition YOKE
2. training in rescue and assistance
3. training CBR teams in proper monitoring and decontamination
4. providing informal material deficiency assessment

8-51. The specific responsibilities of damage control petty officers for damage control training include

1. training on setting requirements for material condition YOKE
2. training in rescue and assistance
3. training CBR teams in proper monitoring and decontamination
4. providing informal material deficiency assessment

8-52. What method of training discusses the basic parts, the functions of each part, and the operation of equipment with limiting parameters?

1. Demonstration
2. Case study
3. Lecture
4. Performance

8-53. Experience has proven that training scenarios provide a good means for training teams to conduct efficient exercises and drills, including integrated training.

1. True
2. False

8-54. Effective integrated scenario-based training exercises the ship as a complete system.

1. True
2. False

8-55. Designing and conducting scenarios that demonstrate cause-and-effect relationships between systems are the essence of integrated training.

1. True
2. False

8-56. A list of training props is presented in

1. OPNAV instructions
2. *NSTM* volumes
3. *ATG* publications
4. NAVSEA instructions

8-57. During all training evolutions the trainer must constantly monitor for safety hazards and practices and be ready to correct any discrepancies even if it means stopping training or a drill in process.

1. True
2. False

8-58. Afloat Training Groups (ATGs) provide most ships examples of

1. repair locker inspections
2. vector identification
3. damage control drills
4. ECCM procedures

8-59. Forces Afloat will comply with *Navy Safety Precautions for Forces Afloat*, OPNAVINST

1. 6200.19 series
2. 2500.19 series
3. 3300.19 series
4. 5100.19 series

8-60. The DCTT team member has the authority to STOP assigned watch stander/repair party personnel any time safety is jeopardized.

1. True
2. False

8-61. The DCTT team member must walk a fine line between allowing mistakes to be made and preventing unsafe conditions.

1. True
2. False

8-62. In the event of an injury, the DCCT member ensures the words *ACTUAL CASUALTY* are used and are passed to CCS. The EOOW should pass the word over the 1MC as follows: "Actual casualty (description), freeze the drill"; followed by additional instructions, if required.

1. True
2. False

8-63. For detailed information about shipboard training and development of scenarios, you should only refer to *NSTM,* chapter 555.

1. True
2. False

8-64. COMNAVSURFLANT/PACINST 3502.2E (SFTM) and OPNAVINST 3120.32C (SORM) should never be used as sources for development of damage control training programs.

1. True
2. False

8-65. Self-simulation shall be used by the watch stander to prevent inadvertent activation of damage control equipment during drills.

1. True
2. False